

- 1 1. A method for producing a wrinkle free seam between garment components each having an
2 upper surface and a lower surface, comprising:
3 placing a bonding element comprising an adhesive material and having an upper surface
4 and a lower surface between a first garment component and a second garment component; the
5 adhesive material having a hot pressing melting point higher than about 160 °C.;
6 sewing a set of stitches traversing through the bonding element and at least one of the
7 garment components such that at least one seam is formed; and
8 providing sufficient heat and pressure to effect the bonding of the adhesive material to at
9 least one of the garment components to form a seam.
- 2 2. The method of claim 1, wherein the adhesive material has a peel strength of equal to or
greater than about 0.5 pound per inch.
- 3 3. The method of claim 1, wherein the adhesive material has a peel strength of equal to or
greater than about 1.0 pound per inch.
- 4 4. The method of claim 1, wherein the upper surface of the second garment component is
adjacent to the lower surface of the bonding element, and the second component is folded
such that the lower surface of the second garment component is adjacent to the upper surface
of the first garment component.
- 5 5. The method of claim 1, further comprising sewing the bonding element between the garment
components by sewing a first stitch along a side of the bonding element and a second stitch
along an opposite side of the bonding element and wherein the first and second stitches
penetrate through all surfaces.
- 6 6. The method of claim 4, further comprising folding the first component such that the upper
surface of the first component is adjacent to the upper surface of the bonding element.
- 7 7. The method of claim 1, wherein the first component is folded over such that the upper surface
of the first component is adjacent to the upper surface of the bonding element and the second

3 component is reverse folded such that the lower surface of the second component is adjacent
4 to the lower surface of the first component and wherein sewing the bonding element and the
5 garment components comprises sewing a first stitch along a side of the bonding element and a
6 second stitch along an opposite side of the bonding element, and the first and the second
7 stitches penetrate through all surfaces.

1 8. The method of claim 1, wherein there is a third garment component having an upper surface
2 and a lower surface, the upper surface of the first component is adjacent to the lower surface
3 of the bonding element, the upper surface of the third component being adjacent to the lower
4 surface of the first component and the lower surface of the third component being adjacent to
5 the upper surface of the second component, the first component is folded such that the first
6 component upper surface is adjacent to the upper surface of the bonding element and a seam
7 is stitched through all surfaces along a side of the bonding element.

1 9. The method of claim 1, wherein there is a third garment component having an upper surface
2 and a lower surface, the upper surface of the first component is adjacent to the lower surface
3 of the bonding element, the upper surface of the third component is adjacent to the lower
4 surface of the first component and the lower surface of the third component is adjacent to the
5 upper surface of the second component, the first component is folded such that the upper
6 surface of the first component is adjacent to the upper surface of the bonding element, the
7 second component is reverse folded such that the lower surface of the second component is
8 adjacent to the lower surface of the second component and a seam is stitched through all
9 surfaces along a side of the bonding element.

1 10. The method of claim 1, wherein the upper surface of the first component is adjacent to the
2 lower surface of the bonding element, the upper surface is folded to also be adjacent to the
3 upper surface of the first component and then the upper surface is further folded such that the
4 lower surface of the first component is adjacent to the bonding element upper surface, and a
5 seam is stitched through all surfaces along a side of the bonding element.

1 11. The method of claim 1, wherein the upper surface of the first component is adjacent to the
2 lower surface of the bonding element and the lower surface of the first component is adjacent
3 to the upper surface of the second component, the first component is folded such that the
4 upper surface of the first component is adjacent to the upper surface of the bonding element,
5 the first component is further folded and reverse folded such that the lower surface of the first
6 component is adjacent to the lower surface of the second component and a seam is stitched
7 through all surfaces along a side of the bonding element.

1 12. The method of claim 1, wherein the first garment component has two substantially parallel
2 sided edges and a bottom edge forming a pocket of a shirt, the method further comprising
3 placing the bonding element along the side edges and bottom edge of the first component
4 such that the upper surface of the bonding element contacts the lower surface of the first
5 garment component, the first component is reverse folded such that the side edges and
6 bottom edge of the first component fold over the bonding element such that the lower surface
7 of the first component is folded over and is adjacent to the lower surface of the bonding
8 element, placing the first garment component adjacent to the second garment component such
9 that the upper surface of the second component is adjacent to the folded over upper surface
10 of the first component, and sewing a stitch through all surfaces along a side of the bonding
11 element, all around the sides and bottom edges of the first component.

1 13. The method of claim 1, wherein the upper surface of the first component is adjacent to the
2 lower surface of the second component, the upper surface of the second component is
3 adjacent to the lower surface of the bonding element and a seam is stitched along a side of the
4 bonding element through all surfaces, wherein the first component is folded such that a
5 portion of the first component lower surface is adjacent to the lower surface of the bonding
6 element and the second component is folded such that the upper surface of second component
7 is adjacent to the upper surface of the bonding element and a seam is stitched along an
8 opposite side of the bonding element through all surfaces.

1 14. The method of claim 1, the upper surface of the first component is adjacent to the lower
2 surface of the second component, the upper surface of the second component is adjacent to
3 the lower surface of the bonding element, wherein the first component is folded such that a
4 portion of the first component lower surface is adjacent to the lower surface of the bonding
5 element and a seam is stitched along a side of the bonding element with a second seam being
6 stitched along an opposite side of the bonding element, both seams penetrating all surfaces
7 and the second component is folded such that the upper surface of second component is
8 adjacent to the upper surface of the bonding element and a seam is stitched between the first
9 and second seam through all surfaces.

10 15. The method of claim 1, further comprising an interlining being adjacent to the lower surface of
11 the bonding element and in contact with the upper surface of the first component, the upper
12 surface of the second component being adjacent to the lower surface of the first component,
13 wherein the interlining is recessed from an edge of the bonding element, wherein the bonding
14 element and first component is folded such that the upper surface of the bonding element is
15 folded upon itself, leaving only the lower surface of the bonding element for bonding adjacent
16 to the interlining and reverse folding the second component such that the lower surface of the
17 second garment is adjacent to itself.

1 16. The method of claim 1, wherein providing sufficient heat and pressure comprises the steps of
2 pressing the seam at a pressure of from about 2.5 to about 8.0 kilograms per square
3 centimeter and a temperature of from about 150 to about 190 °C for about 5 to about 30
4 seconds.

1 17. The method of claim 1, wherein the bonding element comprises an interlining having the
2 adhesive material on at least one surface of the interlining.

1 18. The method of claim 1, wherein the bonding element consists of a solid thermal adhesive film.

- 1 19. The method of claim 1, wherein the bonding element is folded such that the upper surface
2 abuts itself and the lower surface is the only surface available for bonding.
- 1 20. The method of claim 1, wherein an attachment folder is used to place the tape between the
2 garment components and to fold the garment components.
- 1 21. A garment seam, comprising:
2 a first garment component;
3 a second garment component positioned adjacent to the first garment component to define
4 a seam;
5 a bonding element between the first garment component and the second garment
6 component, the bonding element comprising an adhesive material and being bonded to at least one
7 garment component, the adhesive material having a hot pressing melting point of at least about
8 160 °C.; and
9 a set stitch traversing through the bonding element and at least one of the garment
10 components.
- 1 22. The seam of claim 21, wherein garment seam is a hem button stay seam or a hem bottom
2 seam.
- 1 23. The seam of claim 21, wherein garment seam is a pocket seam.
- 1 24. The seam of claim 21, wherein garment seam is a sleeve seam or a close side seam.
- 1 25. The seam of claim 21, wherein garment seam is a placket slit seam.
- 1 26. The seam of claim 21, wherein garment seam is a yoke seam or a join shoulder seam.
- 1 27. A garment seam, comprising:
2 a first garment component having a first surface and a second surface, the first garment
3 component being reverse folded once to divide the first garment component into an unfolded

4 portion and a folded portion, the first surface in the unfolded portion facing the first surface in the
5 folded portion;

6 a bonding element in a substantially U shape having an inner surface and an outer surface,
7 the inner surface of the bonding element being adjacent to the first and second surface of the first
8 garment component in the folded portion, the bonding element comprising an adhesive material
9 on at least one of the surfaces;

10 a set of stitches traversing through the bonding element and at least a portion of the first
11 garment component,

12 wherein at least one surface of the bonding element is bonded to at least one surface of the
13 first garment component by the adhesive material.

28. The seam of claim 27, wherein the bonding element has the adhesive material coated on the
inner surface which is directly bonded to the first and second surfaces of the first garment
component in the folded portion.

29. The seam of claim 27, wherein the bonding element has the adhesive material coated on the
outer surface, and a portion of the outer surface is directly bonded to the first surface of the
first garment component in the unfolded portion.

30. The seam of claim 27, wherein the bonding element is an adhesive tape in a U-shape, the inner
surface of the adhesive tape is directly bonded to both the first and second surfaces of the first
garment component, and a portion of the outer surface of the adhesive tape is directly bonded
to the first surface of the first garment component in the unfolded portion.

31. The seam of claim 30, wherein the first component is reverse folded a second time to divide
the first component into the folded portion, a second folded portion, and a second unfolded
portion, the outer surface of the adhesive tape is directly bonded to first surface of the first
garment component in the folded portion and is also directly bonded to the first surface of the
first garment component in the second unfolded portion.

1 32. The seam of claim 30, further comprising a second garment component having a first surface
2 and a second surface, the second garment component is reversed folded into a folded portion
3 and unfolded portion, the first surface of the second garment component is directly bonded to
4 the outer surface of the adhesive tape, and second surface of the folded portion of the second
5 garment directly abuts the first surface of the first garment in the unfolded portion.

1 33. The seam of claim 30, further comprising a second garment component having a first surface
2 and a second surface and a third garment component, the first surface of the second garment
3 component directly abuts a portion of the outer surface of the adhesive tape, and one surface
4 of the third garment component directly abuts the second surface of the second garment
5 component.

1 34. The seam of claim 33, wherein the third garment component is reverse folded once to divide
2 the third component into a folded portion and an unfolded portion, and the unfolded portion
3 of the third garment component points to the same direction as the unfolded portion of the
4 first garment.

1 35. The seam of claim 34, wherein the folded portion of the third garment component directly
2 bonds to a second U-shaped adhesive tape having an inner surface and an outer surface, both
3 the first surface and the second surface of the third garment component in the folded portion
4 directly bond to the inner surface of the second U-shaped adhesive tape.

1 36. The seam of claim 34, further comprising a substantially planar adhesive tape placed between
2 the second garment component and the folded portion of the third garment component.

1 37. The seam of claim 30, further comprising a second garment component having one surface
2 directly bonded to another portion of the outer surface of the adhesive tape.

1 38. The seam of claim 30, wherein the unfolded portion of the first garment component is folded a
2 second and third time into a substantially U shape comprising the folded portion, a first

unfolded portion, a second unfolded portion, and a second folded portion, wherein the folded portion connects directly to the first unfolded portion which is connected to the second unfolded portion which is in turn directly connected to the second folded portion, and wherein the second surface of the first garment component in the second folded portion faces a portion of the outer surface of the bonding element.

39. The seam of claim 38, further comprising a second garment component have a first surface and a second surface, the second garment is placed between the folded portion and the second folded portion, the first surface of the second garment component is adjacent to the second surface of the first garment component in the second folded portion and the second surface of the second garment component is adjacent to a portion of the outer surface of the bonding element.

40. The seam of claim 39, further comprising a substantially planar bonding element placed to abut the first surface of the second garment component and the second surface of the first garment in the second folded portion.

41. The seam of claim 39, further comprising a second substantially U-shaped adhesive tape having a inner surface and an outer surface, and the second bonding element is placed in the second folded portion such that the inner surface of the adhesive tape directly bonds both the first surface and the second surface of the first garment and a portion of the outer surface of the adhesive tape directly bonds the first surface of the first component.

42. A method of making a garment seam, comprising:

providing a first garment component having a first surface and a second surface;
reverse folding the first garment component a first time to divide the first garment component into an unfolded portion and a folded portion; the first surface in the unfolded portion facing the first surface in the folded portion;
positioning a bonding element adjacent to the first garment; the bonding element having a first surface and a second surface; the bonding element comprising an adhesive material on at least one of the surfaces

9 causing the first surface of the bonding element to directly abut both the first and second
10 surface of the first garment component in the folded portion;
11 stitching through the bonding element and at least a portion of the first garment
12 component to form a seam, and
13 applying heat and pressure to the seam to bond the adhesive material to at least one
14 surface of the first garment component.

1 43. The method of claim 42, wherein the bonding element is positioned adjacent to the folded
2 portion of the first garment component prior to the reverse folding.

1 44. The method of claim 42, wherein the bonding element is folded from a substantially planar
2 tape into a substantially U-shaped object.

1 45. The method of claim 42, wherein the providing step, the positioning step, the reverse folding
2 step, the causing step, and the stitching step are completed in one single stage.

1 46. The method of claim 42, wherein the first component is reverse folded a second time to divide
2 the first component into the folded portion, a second folded portion, and a second unfolded
3 portion, the second surface of the bonding element is directly bonded to first surface of the
4 first garment component in the folded portion and is also directly bonded to the first surface of
5 the first garment component in the second unfolded portion.

1 47. The method of claim 42, further comprising providing a second garment component having a
2 first surface and a second surface, the second garment component is reversed folded into a
3 folded portion and an unfolded portion, the first surface of the second garment component is
4 directly bonded to the second surface of the bonding element, and second surface of the
5 folded portion of the second garment directly abuts the first surface of the first garment in the
6 unfolded portion.

1 48. The method of claim 42, further comprising providing a second garment component having a
2 first surface and a second surface and a third garment component, the first surface of the

second garment component directly abuts a portion of the second surface of the bonding element, and one surface of the third garment component directly abuts the second surface of the second garment component.

49. The method of claim 48, wherein the third garment component is reverse folded once to divide the third component into a folded portion and an unfolded portion, and the unfolded portion of the third garment component points to the same direction as the unfolded portion of the first garment.

50. The method of claim 48, wherein the folded portion of the third garment component directly bonds to a second U-shaped bonding element having a first surface and a second surface, both the first surface and the second surface of the third garment component in the folded portion directly bond to the first surface of the second U-shaped bonding element.

51. The method of claim 48, further comprising providing a substantially planar bonding element between the second garment component and the folded portion of the third garment component.

52. The method of claim 42, further comprising providing a second garment component having one surface directly bonded to another portion of the second surface of the bonding element.

53. The method of claim 42, further comprising folding the unfolded portion of the first garment component a second and third time into a substantially U shape comprising the folded portion, a first unfolded portion, a second unfolded portion, and a second folded portion, wherein the folded portion connects directly to the first unfolded portion which is connected to the second unfolded portion which is then directly connected to the second folded portion, and wherein the second surface of the first garment component in the second folded portion faces a portion of the second surface of the bonding element.

1 54. The method of claim 53, further comprising providing a second garment component have a
2 first surface and a second surface, the second garment is placed between the folded portion
3 and the second folded portion, the first surface of the second garment component is adjacent
4 to the second surface of the first garment component in the second folded portion and the
5 second surface of the second garment component is adjacent to a portion of the second
6 surface of the bonding element.

1 55. The method of claim 54, further comprising providing a substantially planar bonding element
2 placed to abut the first surface of the second garment component and the second surface of
3 the first garment in the second folded portion.

1 56. The method of claim 54, further comprising providing a second substantially U-shaped
2 bonding element having a first surface and a second surface, and the second bonding element
3 is placed in the second folded portion such that the first surface of the bonding element
4 directly bonds both the first surface and the second surface of the first garment and a portion
5 of the second surface of the bonding element directly bonds the first surface of the first
6 component.